



OIL ANALYSIS REPORT

| | |
|-----------------|----------|
| WEAR | NORMAL |
| CONTAMINATION | ABNORMAL |
| FLUID CONDITION | NORMAL |

Area
Store 9 - Marietta
Machine Id
523
Component
Diesel Engine
Fluid
LYDEN 15W40 (--- GAL)

RECOMMENDATION

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number | | Client Info | | LEC0049503 | LEC0034543 | LEC0041190 |
| Sample Date | | Client Info | | 17 May 2024 | 25 Mar 2024 | 25 Sep 2023 |
| Machine Age | hrs | Client Info | | 1828 | 1718 | 1618 |
| Oil Age | hrs | Client Info | | 110 | 100 | 219 |
| Filter Age | hrs | Client Info | | 110 | 100 | 219 |
| Oil Changed | | Client Info | | Changed | Changed | Changed |
| Filter Changed | | Client Info | | Changed | Changed | Changed |
| Sample Status | | | | ABNORMAL | ABNORMAL | ABNORMAL |

WEAR

All component wear rates are normal.

| | | | | | | |
|--------------|--------|-------------|------|--------------|------|------|
| Iron | ppm | ASTM D5185m | >100 | 29 | 43 | 45 |
| Chromium | ppm | ASTM D5185m | >20 | 2 | 1 | 2 |
| Nickel | ppm | ASTM D5185m | >4 | <1 | 0 | <1 |
| Titanium | ppm | ASTM D5185m | | 42 | 68 | 73 |
| Silver | ppm | ASTM D5185m | >3 | 1 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | 8 | 13 | 14 |
| Lead | ppm | ASTM D5185m | >40 | 1 | 0 | 1 |
| Copper | ppm | ASTM D5185m | >330 | 2 | 2 | 3 |
| Tin | ppm | ASTM D5185m | >15 | <1 | 0 | <1 |
| Vanadium | ppm | ASTM D5185m | | <1 | <1 | <1 |
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |

CONTAMINATION

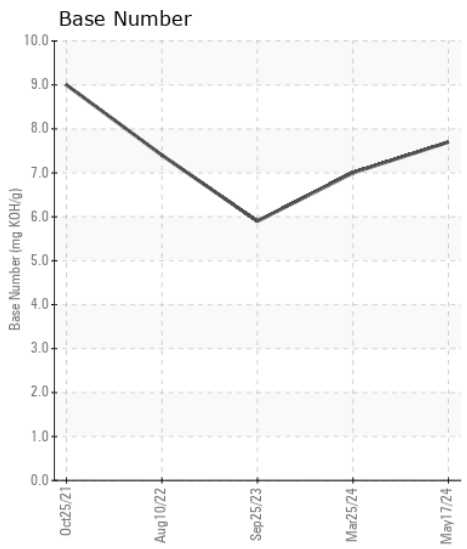
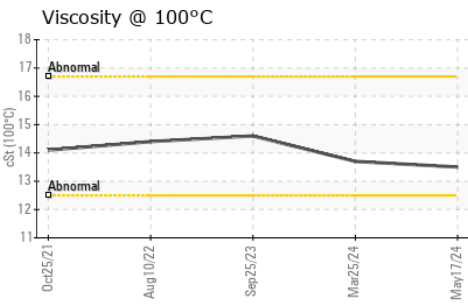
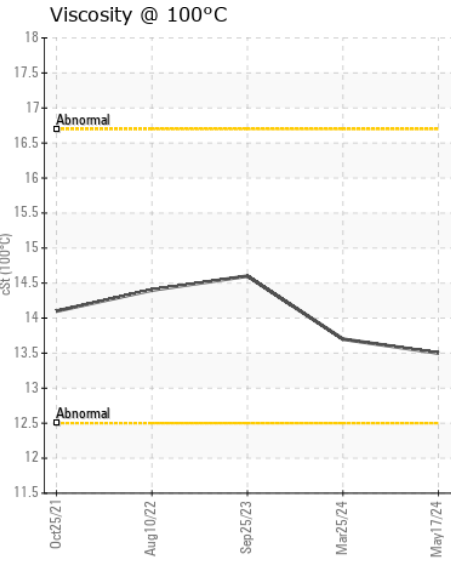
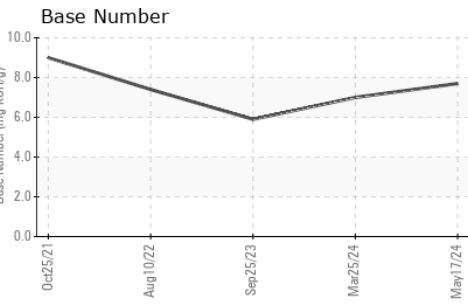
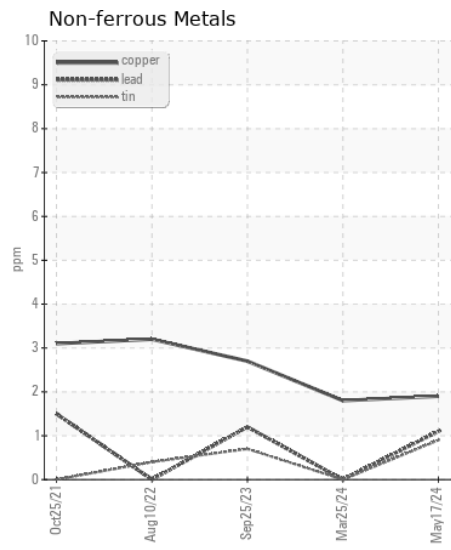
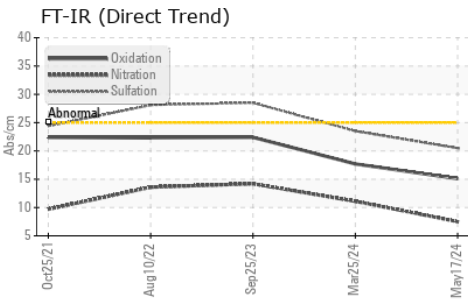
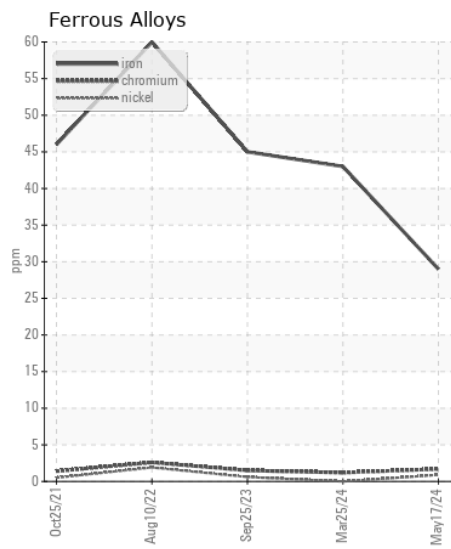
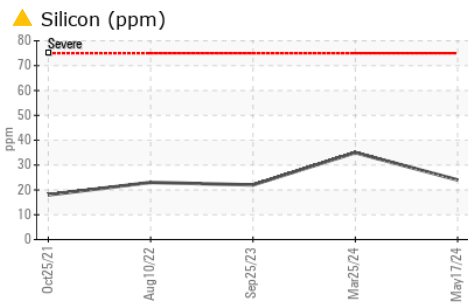
Elemental level of silicon (Si) above normal indicating ingress of seal material.

| | | | | | | |
|------------------|----------|-------------|-------|----------------|-------|-------|
| Silicon | ppm | ASTM D5185m | >120 | ▲ 24 | ▲ 35 | ▲ 22 |
| Potassium | ppm | ASTM D5185m | >20 | 3 | 3 | 4 |
| Fuel | | WC Method | >5 | <1.0 | <1.0 | <1.0 |
| Water | | WC Method | >0.2 | NEG | NEG | NEG |
| Glycol | | WC Method | | NEG | NEG | NEG |
| Soot % | % | *ASTM D7844 | >3 | 0.3 | 0.6 | 1 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 7.5 | 11.1 | 14.2 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 20.5 | 23.5 | 28.5 |
| Silt | scalar | *Visual | NONE | NONE | NONE | NONE |
| Debris | scalar | *Visual | NONE | NONE | NONE | NONE |
| Sand/Dirt | scalar | *Visual | NONE | NONE | NONE | NONE |
| Appearance | scalar | *Visual | NORML | NORML | NORML | NORML |
| Odor | scalar | *Visual | NORML | NORML | NORML | NORML |
| Emulsified Water | scalar | *Visual | >0.2 | NEG | NEG | NEG |

FLUID CONDITION

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

| | | | | | | |
|------------------|----------|-------------|-----|-------------|------|------|
| Sodium | ppm | ASTM D5185m | | 3 | 2 | 3 |
| Boron | ppm | ASTM D5185m | | 93 | 100 | 88 |
| Barium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | | 32 | 10 | 8 |
| Manganese | ppm | ASTM D5185m | | 1 | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | | 469 | 449 | 494 |
| Calcium | ppm | ASTM D5185m | | 1692 | 2190 | 1855 |
| Phosphorus | ppm | ASTM D5185m | | 1035 | 1080 | 1053 |
| Zinc | ppm | ASTM D5185m | | 1209 | 1360 | 1319 |
| Sulfur | ppm | ASTM D5185m | | 4148 | 4597 | 3658 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 15.1 | 17.7 | 22.4 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | | 7.7 | 7.0 | 5.9 |
| Visc @ 100°C | cSt | ASTM D445 | | 13.5 | 13.7 | 14.6 |



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LEC0049503 **Received** : 29 May 2024
Lab Number : 06193645 **Tested** : 30 May 2024
Unique Number : 11050397 **Diagnosed** : 30 May 2024 - Sean Felton
Test Package : CONST (Additional Tests: TBN)

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To discuss this sample report, contact Customer Service at 1-800-237-1369.
 * - Denotes test methods that are outside of the ISO 17025 scope of accreditation.
 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)